IN THE CLAIMS

Claim amendments. Please amend claims 1-2, 5, 7-8, and 10, and withdraw claims 12-18, as follows:

1. **(CURRENTLY AMENDED)** A self-assembled lipid bilayer material comprising a plurality of lipid bilayer molecules in a stacked columnar structure ~~with self-limiting radial dimension mediated by chemical recognition events~~.
2. **(CURRENTLY AMENDED)** The self-assembled lipid bilayer material of Claim 1 wherein ~~the~~ each lipid bilayer molecules in a said stacked columnar structure ~~have~~ has a diameters in the range between approximately 600 Angstroms and approximately 900 Angstroms.
3. **(ORIGINAL)** The self-assembled lipid bilayer material of Claim 1 wherein the columnar structure is greater than approximately 300 Angstroms in length.
4. **(ORIGINAL)** The self-assembled lipid bilayer material of Claim 1 wherein the material is stable is aqueous solutions.
5. **(CURRENTLY AMENDED)** The self-assembled lipid bilayer material of Claim 1 wherein a ligand is ~~situated~~ intercalated between said lipid bilayer molecules~~, said ligand promoting adhesion between said lipid bilayer molecules~~.
6. **(ORIGINAL)** The self-assembled lipid bilayer material of Claim 5 wherein said ligand has at least two bindings sites accessible from opposite sides of the ligand.
7. **(CURRENTLY AMENDED)** The self-assembled lipid bilayer material of Claim ~~1~~ 5 wherein said ligand is a cation.
8. **(CURRENTLY AMENDED)** The self-assembled lipid bilayer material of Claim ~~1~~ 5 wherein said ligand is a copper cation.
9. **(ORIGINAL)** The self-assembled lipid bilayer material of Claim 1 wherein said lipid bilayer molecules are functionalized with a receptor molecule.
10. **(CURRENTLY AMENDED)** The self-assembled lipid bilayer material of Claim ~~1~~ 9 wherein said receptor molecule is iminodiacetic acid.

11. **(ORIGINAL)** The self-assembled lipid bilayer material of Claim 1 wherein molecules selected from proteins, polymers and metal oxides are intercalated between said lipid bilayer molecules.

12. **(Withdrawn)** A method for making a lipid bilayer material, comprising the steps of:

functionalizing lipid bilayers with a receptor lipid;

preparing a lipid bilayer suspension of the functionalized lipid molecules mixed in a matrix lipid; and

adding a ligand specific for said receptor lipid to form a lipid bilayer material.

13. **(Withdrawn)** The method of Claim 12, wherein said receptor lipid has a headgroup functionality that binds to said ligand.

14. **(Withdrawn)** The method of Claim 12, wherein said receptor lipid has from 1 to 4 hydrophobic tails.

15. **(Withdrawn)** The method of Claim 12, wherein said receptor lipid self-assembles to form lamellar structures in an aqueous solution.

16. **(Withdrawn)** The method of Claim 13, wherein said ligand has a plurality of binding sites.

17. **(Withdrawn)** The method of Claim 12, wherein said lipid bilayer has a geometry selected from a closed spherical form and a flat disc.

18. **(Withdrawn)** A method of preparing a lipid bilayer material, comprising:

dissolving distearylphosphatidylcholine in a solvent to yield a first solution;

dissolving 1-octadecyl-2-(9-(1-pyrene)nonyl)-rac-glycero-3-(8-(3,6-dioxy)octyl-1-amino-N,N-diacetic acid) is a solvent to yield a second solution;

mixing said first solution with said second solution;

removing solvent to form a homogenous lipid film;

adding a solution of morpholinepropanesulfonic acid to yield a third solution;

vortexing said third solution to form a suspension solution;

separating said suspension solution to yield a supernatant component; and

adding a solution of $CuCl_2$ in a NaCl aqueous solution, wherein the resultant solution self-assembles to form a lipid bilayer material with a columnar structure.

Certificate of Transmission

I certify that this paper is being transmitted by facsimile on this date to the United States Patent and Trademark Office as identified below:

Location: Group Art Unit 1775 Fax No: 703-872-9306

Date: Dec 2, 2004

Elmer A. Klavetter